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How Leadership Can Help to Mitigate the Dark Side of Autonomy: Results Based on the German Sample of the European Working Conditions Survey**

Abstract

Structural changes in the world of work are accompanied by changes in work content and working conditions, such as an increase in autonomy with respect to work tasks, working time and workplace. It is assumed that these aspects have a positive effect on health and satisfaction at work, but they may also blurry the boundaries of work and private lives and lead to self-endangering work behaviour. As leadership behaviour is particularly important for the safety and health of employees, we assume that it can also help to mitigate possible harmful effects of autonomy. Based on data from the European Working Conditions Survey, we found that working time autonomy and working from home are positively associated with temporal boundarylessness. The construct mediates the association between working from home and unfavourable health outcomes. With respect to working time autonomy, it only mediates the relationship with both health outcomes when constructive leadership is low. Thus, the two autonomy facets can be beneficial but might also deteriorate employees' health by blurring the boundaries between private and work lives. In supporting employees by means of respect and guidance orientation and supporting employees, leaders can mitigate potentially detrimental effects of working time autonomy.

Keywords: Future of work, EWCS, working conditions, boundarylessness, autonomy at work, working time autonomy, working from home
(JEL: I18, J28, J81)

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Introduction

Autonomy is a core concept in organisational management and work studies across disciplines and fields of research. Most of these frameworks define autonomy at the task level (also referred to as decision latitude) as the freedom to schedule work tasks, make task-related decisions and select work methods (Bradtke et al., 2016; Kubicek et al., 2017). From this perspective, autonomy is traditionally coined positively as a fundamental beneficial resource for health and well-being in most of the theoretical frameworks (e.g. Job-Characteristics Model by Hackman & Oldham, 1975, or Job Demands-Resources Model by Bakker & Demerouti, 2007).

However, most of these models evolved during predominantly industrial times or during classical office jobs (Väänänen & Toivanen, 2018), that is, in highly structured and clocked work environments. In these settings augmenting autonomy seemed to be a good way to promote decent working conditions and to boost job satisfaction and the motivation of employees. In the new world of work, working tasks and environments are by far less structured, especially in knowledge-based work (Väänänen et al., 2020). Uncertainty and complexity are continuously increasing in these flexible workplaces, especially given the dynamic process of digitalisation. Modern information and communication technologies (ICT) facilitate the dissemination of job autonomy for employees. Job autonomy does not just reflect control over the accomplishment of work tasks. The flexibilisation of the world of work increasingly allows employees to set working time arrangements and to decide where they work, e.g., working from home (Eurofound & ILO, 2017; Lee, 2016; Mandl & Curtarelli, 2017; Sewell & Taskin, 2015; Spreitzer et al., 2017).

Autonomy in time and space may entail permanent accessibility and the constant possibility of working. Even though employees have the autonomy to choose how they work, it can become temporally boundaryless, limitless and extreme (Arlinghaus & Nachreiner, 2014; Diez et al., 2020; Eurofound, 2020). This may lead to negative health effects (Gerich, 2018; Yang et al., 2019). In this situation, autonomy may also encompass a "dark side" (Kubicek et al., 2017), especially in cases of very high autonomy that can be described as "too much of a good thing" (Stiglbauer & Kovacs, 2018).

Employees´ autonomy and flexibility options further challenge traditional supervising styles based on control or presence at the workplace (de Leede & Heuver, 2016). Moreover, leaders bear increasingly more responsibility for the health and well-being of their employees (Nayani et al., 2018; K. Nielsen et al., 2019; Nielsen & Taris, 2019; Nyberg et al., 2005; Rudolph et al., 2020). Given this ambiguity, leadership operates between the accountability for health promotion and the health risks of boundaryless work.

In this paper, we, on the one hand, examine *temporal boundarylessness,* a state in which working hours and rest periods can no longer be clearly distinguished from

each other (Kossek, 2016), as a possible mediator explaining the detrimental side effect of autonomy. On the other hand, we discuss how leadership can affect these imminent risks of job autonomy, i.e., boundaryless work, which is closely linked to poor health and well-being.

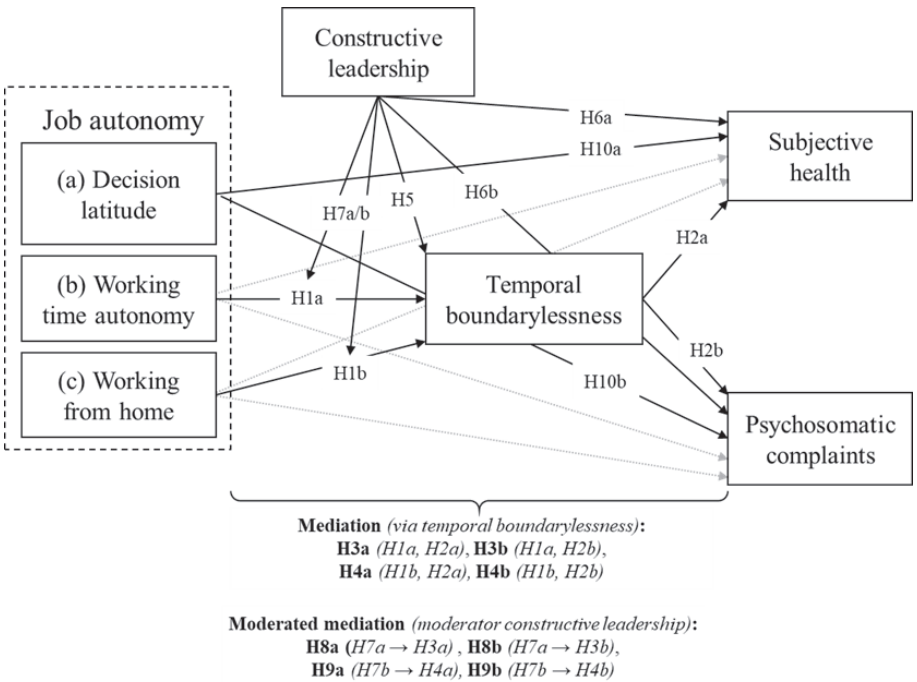
The Dark Side of Autonomy and Role of Temporal Boundarylessness

Although both researchers and practitioners have been emphasizing for a long time the positive effects of job autonomy (Åhlin et al., 2019; Bakker & Demerouti, 2017; Drabe et al., 2015; Hauff et al., 2015; Theorell et al., 2016), it is inevitably followed by more responsibilities, especially in forms of employees' self-management (Müller & Niessen, 2019; Pérez-Zapata et al., 2016). Moreover, it may entail permanent accessibility and timely unrestricted work. Employees with high autonomy may feel particularly that it is expected to work in off-job times (Dettmers, 2017). Furthermore, it is not unusual that employees with high job autonomy voluntarily extend their working hours excessively because of high work motivation (Krause et al., 2012; Snir & Zohar, 2008). These aspects reduce mental detachment from work, making it more difficult to fully recover from job demands (Mellner et al., 2016), leading to detrimental health (Gerich, 2018; Yang et al., 2019). Thus, autonomy is associated with the risk that working hours and rest periods become blurred (referred to as temporal boundarylessness).

However, we argue that it can be crucial to analyse different aspects of autonomy separately. Research already indicates that evidence for detrimental effects of working time and spatial autonomy is stronger than for the more traditional decision latitude (Kubicek et al., 2017). Thus, we focus on three aspects of job autonomy that are crucial characteristics of the modern, flexible workplace (cf. Kubicek et al., 2017). First, we discuss general, overlapping aspects of job autonomy in terms of decision latitude. *Decision latitude* refers to the overall autonomy in terms of the decision-making authority of the employee in the process of task accomplishment (Väänänen & Toivanen, 2018). The experienced controllability of the planning and outcome responsibility of work are important facets of the construct. Second, we consider temporal issues of job autonomy that is, *working time autonomy* (Costa et al., 2004; Eurofound & ILO, 2017). Third, we examine spatial autonomy, i.e., the ability to *work from home.*

The theoretical framework, with its underlying hypotheses, is summarised in Figure 1.

Figure 1. Research framework and hypotheses (direct effects of working time autonomy and working from home on outcome variables in light grey).



Decision Latitude and Temporal Boundarylessness

Although the precise level or threshold of beneficial degrees of job autonomy as well as the fact of a linear relationship between different levels of job autonomy and favourable outcomes remain unclear (Chung-Yan, 2010; De Jonge & Schaufeli, 1998; Konze et al., 2017; Kubicek et al., 2014; Stiglbauer & Kovacs, 2018), stress-related theories regard decision latitude as a buffer for high work demands like high work intensity or time pressure (Hurtienne et al., 2014). Additionally, decision latitude is more about deciding how to accomplish tasks, choosing work methods and scheduling tasks than about working time or location. Therefore, decision latitude is regarded as independent from temporal boundarylessness, and empirical findings show that decision latitude has positive effects if demands are high (Grönlund, 2007). As research on decision latitude and temporal boundarylessness is scarce, we do not postulate a hypothesis but examine it exploratively.

Working Time Autonomy and Temporal Boundarylessness

Working time autonomy describes the extent of employee-oriented flexibility regarding working times (Kelliher & de Menezes, 2019). It includes aspects of

determining the start and finishing times, break times, and the flexibility to take some hours or a day off (Valcour, 2007). At first glance, working time autonomy appears to be (only) a resource: It enables employees to better reconcile private life and work and reduces work-home conflicts (Hughes & Parkes, 2007; Karhula et al., 2020; Nijp et al., 2012; Olsen & Dahl, 2010; Wöhrmann et al., 2021). Unexpectedly, employees do not always benefit from flexible working times (Baltes et al., 1999; Beckers et al., 2012; Brauner et al., 2020; Chung & van der Horst, 2020; Mazmanian et al., 2013; Seitz & Rigotti, 2018; Timms et al., 2020). Based on our hypothesized research model (see figure 1), a potential mechanism to explain this detrimental effect is temporal boundarylessness. Based on a representative German survey (BAuA-Working Time Survey), 24 percent of participants reported that they were expected to be available beyond their working hours and 12 percent were actually contacted by their leaders or colleagues at least once a month (Backhaus et al., 2018). Occasionally, working time autonomy is used to choose adverse working time patterns including overtime and blurring boundaries (Chung & van der Horst, 2020; Lott, 2020; Schieman & Glavin, 2017; Thulin et al., 2019). Working time autonomy results in excessive demands of self-management and responsibility, increasing risk for self-exploitation and self-endangering behaviour, which long-term is related to health deterioration (Dettmers et al., 2016; Krause et al., 2012). Research has already indicated that employees use their autonomy to work longer hours, extend their work hours in their off-job time, and shorten or skip their rest breaks (Kelliher & Anderson, 2010; Messenger et al., 2017). Thus, autonomy may turn into a requirement, leading to blurring boundaries of professional and private life (Kossek, 2016; Schieman & Glavin, 2017). Therefore, we assume:

Hypothesis 1a: *Working time autonomy is associated positively with temporal boundarylessness.*

Working from Home and Temporal Boundarylessness

Similarly, to working time autonomy, working from home is often described as a flexible means to improve the compatibility of work and private life (Allen et al., 2015; Dockery & Bawa, 2018; Eurofound, 2020; Troup & Rose, 2012). By reducing commuting times, it leaves more time for social and family life (Helminen & Ristimäki, 2007; Lachapelle et al., 2017). Furthermore, working from home offers more flexibility to employees (Lee & Sirgy, 2019). It can lead to less distraction, more job satisfaction, work engagement, and productivity (Arntz et al., 2019; De Menezes & Kelliher, 2017; Golden & Gajendran, 2019; Kröll & Nüesch, 2019; Lee & Sirgy, 2019; van der Meulen et al., 2012; Vega et al., 2015). Yet, studies show also negative impacts of working from home in terms of social isolation and threats to professional advancement (Charalampous et al., 2019; Golden & Eddleston, 2020; Ibarra et al., 2020; Walrave & De Bie, 2005). Additionally, blending

work and private spaces can lead to boundaryless work. This is often reflected by working overtime or working during leisure time (Arlinghaus & Nachreiner, 2014; Eurofound, 2019, 2020; Ojala et al., 2014; Schieman & Badaway, 2020). Thus, we hypothesize:

Hypothesis 1b: *Working from home is associated positively with temporal boundarylessness.*

Temporal Boundarylessness and Health

We assume that temporal boundarylessness is an important mediator between autonomy and health risks as it restricts necessary recovery processes. Drawing on the effort-recovery model (Meijman & Mulder, 1998), recovery is essential to restore consumed resources after a normal working day. The greater the work effort, the more recovery, e.g. breaks and rest periods during and after work or at weekends is required (Demerouti et al., 2009). If work demands exceed available resources, or the available resources are reduced due to insufficient recovery, an additional compensatory effort is needed, leading to strain and higher need for subsequent recovery (Hockey, 1997; Meijman & Mulder, 1998). Furthermore, after enormous work effort, recovery becomes more difficult, as response reactions do not stop immediately after the exposure (Meijman & Mulder, 1998). In the long run, this explains how work demands may lead to severe health problems. High or continuous work demands may exceed personal resources, requiring compensatory effort to maintain the expected work performance. This results in an increased need for recovery, which is arguably difficult to satisfy in the leisure time after work, especially due to prolonged effects (Demerouti et al., 2009; Geurts & Sonnentag, 2006). This ends in a downward spiral, such that insufficient recovery accumulates and yields increased strain, such as "prolonged fatigue, complaints about chronic tension, sleep deprivation, and other psychosomatic complaints" (Meijman & Mulder, 1998, p. 25). Temporal boundarylessness arises through the restriction of recovery time by working longer hours, shortening rest periods and working outside working regular hours. The negative health outcomes of long working hours and overtime have been well-documented in several reviews and meta-analyses (Amlinger-Chatterjee, 2016; Bannai & Tamakoshi, 2014; Barnay, 2016; Bernstrøm & Houkes, 2018; Kodz et al., 2003; Spurgeon et al., 1997; Tsuno et al., 2019; Tucker & Folkard, 2012; van der Hulst, 2003). Detrimental effects for individual health can also be found for shortening rest periods (Åkerstedt & Kecklund, 2017; Eldevik et al., 2013; Flo et al., 2014; H. B. Nielsen et al., 2019; Sato et al., 2020; Vedaa et al., 2016; Vedaa et al., 2017). Permanent availability outside working hours respectively working in leisure time reduces detachment from work, impedes recovery, and has a negative impact on employees' health (Arlinghaus & Nachreiner, 2013, 2014; Bennett et al., 2018; Derks & Bakker, 2014; Dettmers, 2017; Mellner, 2016; Schlachter et al., 2018). Thus, working hours and rest periods become blurred.

Temporal boundarylessness can be seen as a consequence of dealing with high work demands (Kratzer, 2020; Mellner et al., 2016). Employees invest additional compensatory effort through working longer, skipping rest periods or working in off-job times and therefore they would actually need more recovery. Over a longer period, this insufficient recovery may result in a poorer health state. If these dimensions are used in combination, it can be assumed that the detrimental consequences for health become even more serious.

As regard our outcome variables, we consider subjective general health and psychosomatic health complaints and, therefore, reflect different stages of health deterioration. (Kaplan & Baron-Epel, 2003) Whereas subjective general health as a positive, subjective measure is eligible to capture fluctuation in mood and well-being (Miilunpalo et al., 1997), psychosomatic health assesses concrete physical reactions following longer term exposure to work strain (Ganster & Rosen, 2013; Roelen et al., 2010). Against this theoretical and empirical background, we postulate:

Hypotheses 2a/2b: *Temporal boundarylessness is associated negatively with subjective health respectively associated positively with psychosomatic health complaints.*

The Mediating Role of Temporal Boundarylessness

Combining the assumptions of hypotheses 1a/b and 2a/b suggests that temporal boundarylessness mediates the relationship between working time autonomy as well as working from home and both health outcomes (subjective health as well as psychosomatic complaints).

Hypotheses 3a/3b: *Temporal boundarylessness mediates the negative relationship between working time autonomy and subjective health respectively the positive relationship between working time autonomy and psychosomatic health complaints.*

Hypotheses 4a/4b: *Temporal boundarylessness mediates the negative relationship between working from home and subjective health respectively the positive relationship between working from home and psychosomatic health complaints.*

Constructive Leadership as Moderator

Leaders play a key role in occupational health promotion and for boundary management of their employees by designing healthy working conditions (Vincent, 2011) or by acting as a role model (Franke et al., 2014; Hammer et al., 2009; Koch & Binnewies, 2015). A recent meta-analysis by Montano et al. (2017) showed that relation-oriented (consideration) and task-oriented (initiating structure) leadership behaviours are both positively associated with mental health (e.g. Judge et al.,

2004). These leadership behaviours provide different resources that "enhance employees' ability to complete work tasks, improve the availability of material means, and help employees solving potential disturbances at the production, administrative, and social level of the organization" (Montano et al., 2017, p. 331). They require respectful treatment and recognition (*as relations-oriented leadership)* and the provision of clarity and orientation (*task-oriented leadership behaviour)*. The latter aspect refers to defining and emphasizing performance goals, providing clear work assignments and roles and coordinating the tasks of all subordinates.

Hence, leaders provide employees with enough resources to cope effectively with the higher demands of self-management accompanied with working time autonomy and working from home. Employees, thereby can better cope with demands and do not need to use maladaptive coping such as working long hours, skipping or shortening their work breaks as well as working in their off-job times. Only a few studies consider the relevance of leadership behaviour in situations of high work time and workplace autonomy. The few results available, however, support our assumption, that constructive leadership behaviour is particularly important for people with high autonomy and high demands. In that respect, Golden and Veiga (2008) found that the relationship quality between employees and leaders moderated the association of extensive virtual work and organisational commitment. Furthermore, we assume that leaders who care about their employees, respect them and listen to them, notice when their employees are overwhelmed (Franke et al., 2014), care about their recovery times and stop them from maladaptive coping behaviour that leads to temporal boundarylessness.

We, therefore, examine the role of leadership behaviour within the relationship of autonomy, temporal boundarylessness and health. We thereby considered a variety of different leadership behaviours, including both relation-oriented (such as respecting, rewarding as well as supporting the development of their followers) and task-oriented aspects (such as providing feedback, helping in getting the job done as well as work together). We summarize those behaviours under the term *constructive leadership*.

Leadership has been rarely examined in the context of temporal boundarylessness and health so far (Schwarzmüller et al., 2018). Furthermore, the few available studies focusing on different outcomes than health such as knowledge sharing or commitment highlight constructive leadership behaviour and high quality of supervisory relationships as especially important for those with high autonomy (Buch et al., 2014; Golden & Veiga, 2008; Leslie et al., 2012). Based on the aspects of leadership and autonomy, we first assume that constructive leadership has a direct effect on temporal boundarylessness and health.

Hypothesis 5: *Constructive leadership is associated negatively with temporal boundarylessness.*

Hypotheses 6a/6b: *Constructive leadership is associated positively with subjective health, respectively associated negatively with psychosomatic health complaints.*

The emotional and instrumental social support by leaders helps to intensify the positive aspects of working from home and reduces employees' boundary-blurring and work-family conflicts (Abendroth & Reimann, 2018; Allen, 2001; Golden & Gajendran, 2019; Grant, 2013; Hammer et al., 2009; Lautsch et al., 2009). Therefore, we expect that constructive leadership behaviour moderates the relationship between job autonomy and temporal boundarylessness.

Hypothesis 7a/7b: *Constructive leadership mitigates the positive associations between working time autonomy, respectively working from home and temporal boundarylessness.*

Combining the assumptions of hypotheses 3a/3b, 4a/4b and 7a/7b suggests that constructive leadership behaviour moderates the indirect relationship (mediated by temporal boundarylessness) between working time autonomy as well as working from home and both health outcomes (subjective health as well as psychosomatic complaints).

Hypothesis 8a/8b: *Constructive leadership behaviour moderates the negative indirect relationship (via temporal boundarylessness) between working time autonomy and subjective health status, respectively the positive indirect relationship (via temporal boundarylessness) between working time autonomy and psychosomatic health complaints.*

Hypothesis 9a/9b: *Constructive leadership behaviour moderates the negative indirect relationship (via temporal boundarylessness) between working from home and subjective health status, respectively the positive indirect relationship (via temporal boundarylessness) between working from home and psychosomatic health complaints.*

Autonomy and Health Outcomes

Besides the indirect relationship between aspects of autonomy and health outcomes via temporal boundarylessness, direct effects are also conceivable.

Based on the stress theories, decision latitude buffers work demands and stress and is associated with better health and well-being (Eatough & Spector, 2014; Hackman & Oldham, 1975; Hämmig & Bauer, 2013; Niedhammer et al., 2020; Rosen, 2016).

In contrast to decision latitude and overall job autonomy, the effects of working time autonomy as well as working from home on health are more inconclusive (Janssen & Nachreiner, 2004; Kröll & Nüesch, 2019; Nijp et al., 2012). Although,

studies indicate that working time autonomy as well as working from home are associated with better well-being and higher job satisfaction and appear to be a buffer for negative health effects of working conditions, such as shift work or time pressure (Albrecht et al., 2017; Anderson et al., 2015; Biron & van Veldhoven, 2016; Nätti et al., 2015; Nätti et al., 2014; Vega et al., 2015), others fail to show a positive relationship among working time autonomy as well as working from home and health (Janssen & Nachreiner, 2004; Kröll & Nüesch, 2019; Olsen & Dahl, 2010). With respect to working from home, aspects, which explain health variance are rather the working conditions associated with working from home and the practical implementation (BAuA, 2019; Charalampous et al., 2019; Eurofound, 2020; Gajendran & Harrison, 2007). Due to empirical contradictions, we only postulate a hypothesis for decision latitude:

Hypotheses 10a/10b: Decision latitude is positively associated with subjective health respectively negatively associated with psychosomatic health complaints.

Method

Dataset and Sample

We used the fifth wave of the European Working Conditions Survey (EWCS) gathered in 2015 (Parent-Thirion et al., 2017). The EWCS covers data from workers of the European Union member states as well as other European countries[1]. Participants were included if they had worked at least one hour for pay or profit in the week preceding the interview (ILO, 2013). The survey was conducted by computer-assisted personal interviews (CAPI). The measures included a large number of questions regarding demographics, economic branches, occupations, physical and psychosocial risks, working time and workplace dimensions, as well as health and well-being. We used data from the German sample only, considering a basic population of all German inhabitants aged 16 years and older, who were in employment at the time of the data gathering. Respondents older than 65 and self-employed workers were excluded. Respondents with missing data on one of the outcome variables of the model had also been removed prior to analysis. The final dataset consisted of n = 1,781 respondents.

Independent, Moderator and Mediator Variables

We included working time autonomy, working from home, and a more "traditional" form of autonomy, decision latitude, at the task level. The reason for including decision latitude was the notion to capture also the definition which is mostly addressed in theoretical frameworks in work and organisational psychology (e.g.

1 28 EU Member States, Norway, Switzerland, Albania, Former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey.

Bakker & Demerouti, 2007; Hackman & Oldham, 1975) and compare it to the "new" dimensions of autonomy. We further considered leadership and temporal boundarylessness as independent respectively mediator or moderator variables in the model. The question numbers in the EWCS questionnaire[2]are reported in square brackets.

Decision latitude. Three items [Q54a-c] were used to operationalize decision latitude (e.g., "Are you able to choose or change... a. your order of tasks; b. your methods of work; c. your speed or rate of work"). The answer options were "yes" or "no". The three-item scale showed a good internal consistency (Kuder-Richardson 20 coefficient, KR20 =.767), so we created an index that counted the number of "yes" options that ranged from 0 (low decision latitude) to 3 (high decision latitude).

Working time autonomy was assessed by several items that reflect the ability to decide when to work. The first item [Q42] measured, whether the working time arrangements were set by the employer or the employee (answer categories: 1 "They are set by the company/organisation with no possibility for changes"; 2 "You can choose between several fixed working schedules determined by the company/organisation"; 3 "You can adapt your working hours within certain limits (e.g., flexitime)"; 4 "Your working hours are entirely determined by yourself"). Options 1 and 2 were considered to be employer-oriented working time arrangements with low autonomy (0). Answers 3 and 4 reflect employee-oriented working time arrangements and a higher autonomy (1). The second item measured the ability to take an hour or two off during working hours (answer categories: 1 "Very easy"; 2 "Fairly easy"; 3 "Fairly difficult"; 4 "Very difficult"). Fairly and very difficult (3–4) were clustered into low autonomy (0), very and fairly easy (1–2) were assigned to high autonomy (1). The third item [Q61f] asked if the respondents could take a break when they wish (answer categories: 1 "Always"; 2 "Most of the time"; 3 "Sometimes"; 4 "Rarely"; 5 "Never"). Sometimes, rarely, and never (3–5) were classified as low autonomy (0), whereas always and most of the time (4–5) were classified as high autonomy (1). All high autonomy answers (1) were counted and represent the index of working time autonomy ranging from 0 (low working time autonomy) to 3 (high working time autonomy). Similar indices and items have been used in working time flexibility research (Costa et al., 2006; Eurofound & ILO, 2017).

Working from home was operationalized by a single item [Q35e] assessing the amount of time the respondents worked from home ("How often you have worked in each location since you started your main paid job… e. Your own home"). The scale ranges from 1 ("Never") to 5 ("Daily").

2 The English version of the EWCS questionnaire can be obtained from https://www.eurofound.europa.eu/sites/default/files/page/field_ef_documents/uk_questionnaire.pdf, last retrieval 2019–11–18.

Constructive leadership was measured by six items [Q63a-f]. Each item gives a statement regarding general aspects of leadership containing both relations-oriented and task-oriented behaviour (e.g., "Your immediate boss respects you as a person" [Q63a]). Respondents were asked to rate these statements using answer categories from "strongly disagree" (1) to "strongly agree" (5). The scale was highly reliable (Cronbach's α =.898); therefore the mean of the items was used as a constructive leadership index ranging from 1 (low leadership quality) to 5 (high leadership quality).

Temporal boundarylessness is represented by four different aspects extending work to unusual hours and working outside regular working time. First, respondents were asked about Sunday work [Q37b], working times longer than ten hours a day [Q37d], and rest periods shorter than eleven hours between two consecutive shifts [Q38]. We established a dichotomy of whether these aspects occurred less than once a month (low boundarylessness, 0) vs. at least once a month (high boundarylessness, 1). Additionally, availability outside working hours was measured by one item [Q46] asking how often respondents had to work in their free time to meet work demands (answer categories: 1 "Daily"; 2 "Several times a week"; 3 "Several times a month"; 4 "Less often"; 5 "Never"). Again, we dichotomized persons working less often than several times a month (low boundarylessness, 0) vs. at least several times a month (high boundarylessness, 1). All aspects of high boundarylessness (1) were counted to compute an index that ranged from 0 (low temporal boundarylessness) to 4 (high temporal boundarylessness).

Outcome Variables

For the health outcomes, *subjective general health* was measured using a single-item [Q75] asking about how the respondents' health was in general (answer categories: 1 "Very good"; 2 "Good"; 3 "Fair"; 4 "Bad"; 5 "Very bad"). The *psychosomatic health complaints* were assessed as follows: "Over the last 12 months, did you have any of the following health problems?" Nine psychosomatic health complaints were included in the questionnaire [Q78a-i]: hearing problems; skin problems; backache; muscular pains in shoulders, neck and/or upper limbs (arms, elbows, wrists, hands etc.); muscular pains in lower limbs (hips, legs, knees, feet etc.); headaches; eyestrain; injury(ies); anxiety; and overall fatigue. Each psychosomatic health complaint could be answered by "yes" and "no". An index was calculated counting the "yes" answers following the guidelines of Franke (2015) and Müller, Tisch et al. (2018). The index ranged from 0 (no complaints) to 9 (all complaints).

Control Variables

We considered several individual variables as control variables such as gender ([Q2a] 1 "male", 2 "female"), age ([Q2b]), education level (1 "low", 2 "medium", 3 "high", according to ISCED, see (UNESCO, 1997)), occupation (International

Standardized Classification of Occupations 2008 (ISCO-08), 2-digits), and economic branch (Statistical Classification of Economic Activities in the European Community (NACE), 2nd revision, 2 digits). Men and women differ in working time autonomy and subjective health status self-reports (Artazcoz et al., 2013). Furthermore, men and women differ in the use of working time autonomy and working from home in terms of overtime vs. family obligations and housework due to traditional gender roles (Arntz et al., 2019; Chung & van der Horst, 2020; Lott, 2020). Age is also associated with health status (Wels, 2019; Żołnierczyk-Zreda et al., 2012). Autonomy at work is closely linked to higher education levels and more prominent in white-collar workers (Hensvik et al., 2020; Mergener, 2020). Additionally, we controlled for full and part time employment ([Q2d]: "do you work part time or full time?" 1 "part time"; 2 "full time") and shift work (Q39e: "Do you work shifts?" 1 "no"; 2 "yes"). Both working time models are associated with health complaints and low levels of working time autonomy respectively working from home (Ahn, 2016; Biron & van Veldhoven, 2016; De Spiegeleare & Piasna, 2017; Wels, 2019). Shift work is associated with several atypical working time aspects, e.g., Sunday work and short rest periods (Greubel et al., 2016; Karhula et al., 2019; Zhao et al., 2019).

Data Analysis

We fitted path models following the approach of Hayes (2013; Stride et al., 2015) to test the effects of autonomy and leadership, the moderating effect of leadership on temporal boundarylessness, and the mediation effect of temporal boundarylessness on health. We used Mplus Version 7.4 with maximum likelihood estimators (Muthén & Muthén, 2015). All control variables except for age were dummy coded (reference categories can be obtained in Tab. 1). First, we report unweighted descriptive results. Second, for path models, we report standardized regression coefficients (β) with standard errors (*SE*) and significance levels (p). We furthermore assessed the goodness-of-fit by several indices (χ^2, *CFI, RMSEA*).

In the light of the cross-sectional design of the study, we point out that the results purely describe relationships among the constructs without claiming any causal interpretation.

Results

Sample Description

Table 1 gives an overview regarding the analysis sample. The sample is balanced as to the ratio of men and women. There are slightly less low educated and young employees included. The occupations (ISCO-08) and economic sectors (NACE) are comparable to the German working population with a large number of workers in the industry and service sector. The outcome variables show relatively good subjective health and few psychosomatic health complaints. Decision latitude is

moderately high developed in the sample. Working from home is rare in the sample. Leadership shows a medium to high expression and the mean of temporal boundarylessness is quite low compared to the range of the metric scales.

Table 1. Descriptive sample statistics

Variables		Statistics
Outcomes		
Subjective health	(1 low, 5 high)	*M* = 3,93 (*SD* = 0,740)
Psychosomatic health complaints	(0 none, 9 all)	*M* = 1,70 (*SD* = 1,705)
Independent variables		
Decision latitude	(0 low, 3 high)	*M* = 1,93 (*SD* = 1,175)
Working time autonomy	(0 low, 3 high)	*M* = 1,71 (*SD* = 0,986)
Working from home	(1 never, 5 daily)	*M* = 1,24 (*SD* = 0,749)
Moderator and mediator variables		
Constructive leadership	(1 low quality, 5 high quality)	*M* = 3,78 (*SD* = 0,862)
Temporal boundarylessness	(0 low, 4 high)	*M* = 0,92 (*SD* = 0,995)
Control variables		
Gender	(male)*	50 %
	(female)	50 %
Age	(15–29 years)*	17 %
	(30–44 years)	32 %
	(45–54 years)	29 %
	(55–65 years)	22 %
Education (ISCED)	(low)*	8 %
	(medium)	78 %
	(high)	14 %
Part time / full time	(full time)*	71 %
	(part time)	29 %
Economic sectors (NACE four groups)	(Agriculture, hunting, forestry and fishing)	2 %
	(Industry)	27 %
	(Services, excluding public administration)*	45 %
	(Public administration, defence and other services)	27 %
Occupations (ISCO-08)	(Service and sale workers)*	24 %
	(Managers and professionals)	12 %
	(Technicians and associate professionals)	15 %
	(Clerical support workers)	15 %
	(Skilled agricultural, forestry and fishery workers)	1 %
	(Craft and related trades workers)	13 %
	(Plant and machine operators, and assemblers)	9 %
	(Elementary occupations)	11 %
Shift work	No*	75 %
	Yes	25 %

Note. * indicates the reference categories used for the coding of dummy variables in the statistical models.

An overview of the correlation between all continuous variables is displayed in Table 2.

Table 2. Correlation matrix

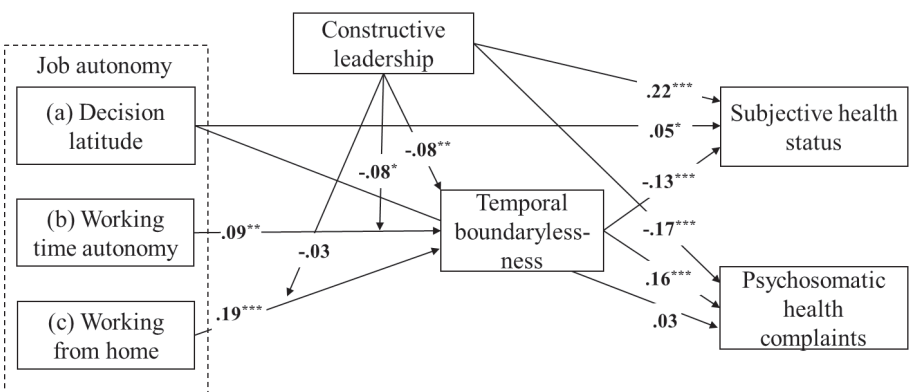
	Variable	1	2	3	4	5	6	7
1	Psychosomatic health complaints							
2	Subjective health	-.47***						
3	Decision latitude	.01	.08**					
4	Working time autonomy	.00	.05*	.28***				
5	Working from home	.02	.00	.17***	.20***			
6	Temporal boundarylessness	.12***	-.09***	-.03	.04	.19***		
7	Constructive leadership	-.19***	.29***	.14***	.13***	.05	-.08***	
8	Age	.15***	-.39***	.09***	.07***	.08***	-.03	-.11***
9	Sex	.05*	-.01	.05*	.01	-.04	-.16***	.02
10	Part time / Full time	-.07**	.11***	-.01	-.07***	.06*	.19***	.01
11	Shift work	.03	-.03	-.21***	-.20***	-.13***	.26***	-.09***

Note. *** p <.001 ** p <.01 * p <.05

Path Models

Figure 2 and Table 3 present the results of the path model of the moderated mediation model. The overall goodness-of-fit is quite good (Kline, 2015; Schermelleh-Engel et al., 2003), χ^2 (df) = 12.575 (6), p <.050, *RMSEA* =.027, *SRMR* =.004, *CFI* =.994.

Figure 2. Results of the moderated mediation model. Direct effects for mediated paths and control variables not shown for better clarity (gender, age, education, occupation, economic sector, full time / part time and shift work regressed on subjective health, psychosomatic health complaints and temporal boundarylessness). Standardized path coefficients, *** p <.001 ** p <.01 * p <.05.



Combining hypotheses 1a/b and 2a/b, we further examined if temporal boundarylessness mediates the associations between working from home as well as working time autonomy and our health outcomes (indirect effects). Results[3] indicate that temporal boundarylessness mediates the association between working from home and subjective general health (b = -.02, CI95 % [-.04; -.01]), and the association between working from home and psychosomatic health complaints (b =.06, CI95 % [.02;.10]). However, temporal boundarylessness does not mediate the associations between working time autonomy and both health outcomes (general health: b =.00, CI95 % [-.01;.01]; psychosomatic health complaints: b =.00, CI95 % [-.02;.02]). Thus, hypotheses 4a, 4b are supported, while 3a and 3b are not.

Table 3. Results of the path model

	Subjective health				Psychosomatic health complaints				Temporal boundarylessness			
Direct effects:	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*
Temporal boundarylessness	-.09	.02	-.13	<.01	.27	.05	.16	<.01	–	–	–	–
Decision latitude	.03	.02	.05	.04	.04	.04	.03	.32	-.02	.02	-.02	.49
Working time autonomy	.02	.02	.03	.25	.05	.05	.03	.27	.10	.03	.09	<.01
Working from home	-.02	.03	-.02	.56	.04	.07	.02	.54	.25	.05	.19	<.01
Constructive leadership	.19	.02	.22	<.01	-.34	.06	-.17	<.01	-.10	.03	-.08	<.01
Moderation: Constructive leadership									*b*	*SE*	*β*	*p*
* decision latitude									.03	.03	.03	.28
* working time autonomy									-.10	.04	-.08	.01
* working from home									-.05	.06	-.03	.40
Model fit indices:												
χ^2						12.575						
df						6						
p						.050						
CFI						.994						
RMSEA						.027						
SRMR						.004						

Control variables:

Gender (male/female), age (in years), education (low/medium/high), working time duration (full time/part time), economic branches (*NACE*), occupations (*ISCO-08*), shiftwork (yes/no), see appendix (Table A1) for the path model results of the control variables

Note. *b* unstandardised coefficient, *SE* standard error of *b*, *β* standardised coefficient, *p* significance value, χ^2 model chi-square, *df* degrees of freedom for χ^2, *CFI* comparative fit index, *RMSEA* root mean square error of approximation, *SRMR* standardized root mean residual, see Kline (2015) for an overview of fit indices.

3 We presented the unstandardized results for the indirect effects.

With respect to the associations between the different aspects of autonomy and temporal boundarylessness (hypotheses 1a-b), working from home (β =.19, p <.001) and working time autonomy (β =.09, p =.002) are significantly and positively related to temporal boundarylessness. Thus, our results support hypotheses 1a and 1b. In line with our hypotheses 2a-b, temporal boundarylessness was negatively associated with subjective health (β = -.13, p <.001), positively associated with psychosomatic complaints (β =.16, p <.001).

In the next step, we tested the direct effects of constructive leadership (5 and 6a/b) as well as our moderation hypotheses (7a/b and 8a/b). Constructive leadership behaviour is negatively and significantly associated with temporal boundarylessness (β = -.08, p =.002). Again, in line with our hypotheses, constructive leadership behaviour is positively and significantly related to subjective health (β =.22, p <.001) as well as negatively and significantly related to psychosomatic health complaints (β = -.17, p <.001). We further found that constructive leadership moderated the association between working time autonomy and temporal boundarylessness. The interaction effect was significant (β = -.08, p =.014). For high constructive leadership, the effect of working time autonomy is less strongly correlated to temporal boundarylessness (hypothesis 7a). Put in other words, constructive leadership buffers the positive effect of working time autonomy on temporal boundarylessness. The simple slope test revealed that the slope of the line representing high moderator values (i.e., high constructive leadership) was not significant (b =.01, p = 726), whereas the slope representing low constructive leadership was significant (b =.18, p =.001). However, contrary to our hypothesis 7b, leadership behaviour did not moderate the association between working from home and temporal boundarylessness (β = -.03, p =.401). We further tested, if constructive leadership moderates the indirect relationship between working time autonomy and our health outcomes via temporal boundarylessness. We found a moderated mediation for working time autonomy (supporting hypotheses 8a/b). Thus, results of the moderated mediation show that at a low level of constructive leadership, working time autonomy is significantly negatively related to health and positively related to psychosomatic health complaints. On the other hand, at a high level of constructive leadership, the associations are no longer significant (see table 4). We did not test the moderated mediation for working from home as the moderation effect of constructive leadership for the relationship between working from home and temporal boundarylessness was not significant. Thus, our results support hypotheses 5, 6a/6b, 7a, and 8a/8b, while they reject hypotheses 7b and 9a/9b.

Table 4. Moderated mediation – indirect effects via temporal boundarylessness

		Subjective health			Psychosomatic complaints		
Moderator constructive leadership	*Independent variable*	*b*	*CI 95 %*		*b*	*CI 95 %*	
	(a) Decision latitude	-0.001	-0.008	0.005	0.003	-0.015	0.021
low		-0.017	-0.031	-0.007	0.048	0.020	0.088
medium	(b) Working time autonomy	-0.009	-0.018	-0.003	0.026	0.010	0.050
high		-0.001	-0.009	0.005	0.004	-0.017	0.025
	(c) Working from home	-0.019	-0.038	-0.007	0.055	0.023	0.103

Note. b unstandardised coefficient, *CI* confidence interval.

Finally, we considered the direct relationships between the three aspects of autonomy and our two health outcomes. While decision latitude is significantly and positively associated with subjective health (β =.05, p =.042), the regression coefficients for working time autonomy and working from home are quite small and both statistical not significant (working time autonomy: β =.03, p =.249; working from home: β = -.02, p =.560). The regression coefficients regarding psychosomatic complaints are positive for all three aspects of autonomy, but again not significant (decision latitude: β =.03, p =.324; working time autonomy: β =.03, p =.270; working from home: β =.02, p =.539). Thus, our results reject hypothesis 10b, while hypothesis 10a is supported.

Discussion

The present study was designed to examine the potentially harmful side of different aspects of autonomy (decision latitude, working time autonomy and working from home) on individual health by blurring the boundaries between work and private lives. We hypothesized that constructive leadership might be a resource and help to mitigate harmful effects of the autonomy facets. To this end, we fitted path models based on the data from the European Working Conditions Survey to test our assumptions. Our results lend partial support to our hypotheses. A summary of our results is shown in Table 5.

Table 5. Overview of hypotheses and results

Hyp.	Path	Result
Direct effects		
1a	Working time autonomy → Temporal boundarylessness	supported
1b	Working from home → Temporal boundarylessness	supported
2a	Temporal boundarylessness → Subjective health (–)	supported
2b	Temporal boundarylessness → Psychosomatic health complaints	supported
5	Constructive leadership → Temporal boundarylessness (–)	supported
6a	Constructive leadership → Subjective health	supported
6b	Constructive leadership → Psychosomatic health complaints (–)	supported
10a	Decision latitude → Subjective health	supported
10b	Decision latitude → Psychosomatic health complaints	not supported
Mediation		
3a/b	Temporal boundarylessness mediates the effect of working time autonomy on health (*H1a, H2a)* and psychosomatic health complaints *(H1a, H2b)*	not supported
4a/b	Temporal boundarylessness mediates the effect of working from home on health (*H1b, H2a)* and psychosomatic health complaints (*H1b, H2b)*	supported
Moderation		
7a	Constructive leadership moderates the effect of working time autonomy on temporal boundarylessness (→*H1a*)	supported
7b	Constructive leadership moderates the effect of working from home on temporal boundarylessness (→*H1b*)	not supported
Moderated mediation (see also Table 4)		
8a/b	Constructive leadership moderates the mediation effect of working time autonomy via temporal boundarylessness on health (*H7a→H3a)* and psychosomatic health complaints *(H7a→H3b)*	supported
9a/b	Constructive leadership moderates the mediation effect of working time autonomy via temporal boundarylessness on health (*H7a→4a)* and psychosomatic health complaints *(H7a→H4b)*	not supported

Note. Hyp. Hypotheses enumerated according to Figure 1, (–) indicates an assumed negative relationship between the variables.

In line with our hypotheses, working time autonomy and working from home were positively associated with temporal boundarylessness, which proved to mediate the associations between working time autonomy (when constructive leadership behaviour is low) and working from home with both health outcomes. These findings strengthen existing literature on the potential dark side of autonomy (Arlinghaus & Nachreiner, 2014; Kubicek et al., 2017; Mellner et al., 2016) and reveal an underlying mechanism. The results support sociological concepts that new forms of work create "entreployees", who feel exceeding responsibility and identification with their organization (Pongratz & Voß, 2003) and work at the expense of their own health accordingly (Peters, 2011).

Our results also contribute to the research on self-endangering behaviour. Especially highly flexible work arrangements which require high self-management and self-re-

sponsibility increase the risk of using maladaptive active coping mechanisms such as an extension of work time, shortening recovery times or presenteeism behaviour in order to tackle the excessive demands (Dettmers et al., 2016; Krause et al., 2012) which long-term affects health unfavourably. Thus, the flexibility to set working time arrangements and to work from home is not always beneficial for employees. They can also use this freedom in a maladaptive way by working longer hours, extending work hours in off-job time, and shortening or skipping rest breaks, thereby leading to temporal boundaryless work and detrimental health outcomes. However, the missing links between working time autonomy as well as working from home and both health outcomes may indicate that beyond temporal boundarylessness other counteracting mediators might play a role in explaining the health effects of autonomy. Further research uncovering and comparing different mechanisms may be necessary.

Moreover, we did not find a positive association between decision latitude and temporal boundarylessness. Decision latitude is however directly related to at least one of the health outcomes, that is, subjective health. Differently from working time autonomy and working from home, decision latitude is a resource for health and well-being, which is in line with the relevant theoretical frameworks such as Job-Characteristics Model by Hackman and Oldham (1975) or Job Demands-Resources Model by Bakker and Demerouti (2007). Obviously, the freedom to schedule work tasks, take task-related decisions and select work methods buffer work demands and stress and support individual health and well-being (Eatough & Spector, 2014; Hackman & Oldham, 1975; Hämmig & Bauer, 2013; Niedhammer et al., 2020; Rosen, 2016). This is also in line with results of a recent literature review by Kubicek et al. (2017), showing that method and planning autonomy is mainly beneficial for health and research evidence for the detrimental effects of autonomy are by comparison stronger for working time autonomy and working from home. However, the association between decision latitude and subjective health is quite small and we do not find significant associations for both health outcomes. Thus, it is worth examining different counteracting mechanisms which mediate or moderate the relationship between decision latitude and health as well. In contrast to working time autonomy and working from home, temporal boundarylessness does not appear to be one of these mechanisms. Possibly, temporal boundaryless refers too strongly to time aspects and thus does not match the main aspects of decision latitude (schedule work tasks, make tasks-related decisions and select work methods).

As a moderator, we considered constructive leadership behaviour. In line with our hypotheses, constructive leadership behaviour is negatively and significantly related to temporal boundarylessness as well as psychosomatic health complaints and positively related to subjective health. Furthermore, our results support that constructive leadership behaviour helps to mitigate the detrimental effects of working time autonomy on health outcomes. Leadership behaviour may, therefore, act

as a resource for reducing temporal boundarylessness and is beneficial for individual health (Montano et al., 2017). Constructive leadership behaviour may help employees with high working time autonomy to deal with the associated increased demands so that employees cope more effectively (e.g., asking for support) instead of using maladaptive coping strategies.

Contrary to our assumption, we did not find this buffering effect for working from home. With working from home, constructive leadership does apparently not mitigate risks related to the lack of clear boundaries between work and the private sphere. A reason for this could be that it is much more difficult for leaders to influence employees when they are not on site. Particularly trust between the leader and employee is more difficult to develop initially if face-to-face contact and direct interaction are missing (Antoni & Syrek, 2017; Ford et al., 2017; Kordsmeyer et al., 2020). Therefore, literature on virtual leadership recommends considering face to face contact, videoconferencing etc. for the onboarding process (Antoni & Syrek, 2017). Another reason for our result might be that leadership aspects other than captured in the EWCS are more relevant in terms of spatial separation between leader and employee (e.g., use of digital means of communication). The spatial distance between the leader and their followers may also influence the leader-follower relationship, implying that in digitalised work environments leaders will have to face new challenges (Antoni & Syrek, 2017; Romeike et al., 2016). The question arises of how constructive and healthy leadership might look like if they lead over distance.

Limitations

Our study features several limitations with respect to study design, sample and measures that have to be taken into account when interpreting our results.

The cross-sectional design is a weak point of the analysis. We cannot rule out reverse or reciprocal causation between our three facets of autonomy, temporal boundarylessness and health outcomes. It is also possible that persons with specific diseases and health complaints use flexible work arrangements such as working from home to adapt their work requirements to their specific health needs (Holland & Collins, 2018; Irvine, 2011). Furthermore, although we controlled for a variety of variables such as gender, education level, occupation, economic branch, part time employment and shift work, we are not able to control for self-selection and unobserved heterogeneity. Working time flexibility and working from home are not equally pervasive in all occupations and jobs. Thus, it might be possible that temporal boundarylessness is not triggered by working time autonomy or working from home, but by the working conditions that prevail in jobs that are accompanied by high working time autonomy or working from home.

With respect to our measures, we have to consider three essential limitations. First, all of our measures were self-rated. It might be the case that our health measures are

affected by different health perceptions and that our statistical results are influenced by common method bias (Podsakoff et al., 2003). Second, we used a leadership scale, which shows good reliability values but lacks a theoretical foundation. The items are not theoretically driven and are not taken from standardised scales, but contain aspects of leadership behaviour that have proven to be relevant in the past. The question arises if these leadership concepts will still be appropriate in the future. An increase in flexible and digitalized forms of work might reveal the importance of other leadership aspects. We, therefore, see a need for research on health-promoting leadership behaviour in highly flexible working environments.

Third, another limitation that has to be taken into account is the restriction on working from home as one possible form of workplace autonomy. Of course, employees with high workplace autonomy have the freedom to choose to work at other places instead of their home outside the employer's premises as well (Janneck et al., 2018). Some employees may prefer to work in cafés or co-working spaces or decide to use the commuting times of a business trip (Robelski et al., 2019). Due to methodological reasons, we decide to focus only on working from home. The different forms of workplace autonomy are highly interrelated with different occupations (Hensvik et al., 2020; Magnusson, 2019) and a joint consideration would have possibly increased our problems of self-selection and unobserved heterogeneity. In addition to that, by combining these forms of mobility to one measure, we will mix up different effects (e.g. traffic-related stressors are only relevant for business trips or commuting, but may be reduced when working from home; De Frank, Konopaske, & Ivancevich, 2000; Künn-Nelen, 2016; Westman, Etzion, & Chen, 2009). However, we are convinced that it is worth an additional study to examine and compare these different forms of workplace autonomy and their consequences for individual health.

Despite these limitations, this study points out that the "new" facets of autonomy are not only beneficial for individual health but may have the potential to deteriorate employees' health by blurring the boundaries between private and work lives. However, leaders have the possibility to mitigate potential detrimental side effects of working time autonomy by treating them respectfully and guiding their followers with clear work assignments.

Implications

Based on our research, we can derive recommendations for practitioners as well as implications for follow-up questions to examine in future research.

For Managerial Practice

Organisations and leaders should be aware that provided resources such as working time autonomy and the possibility to work from home may be accompanied by potentially harmful side effects such as temporal boundarylessness. Clear organisa-

tion-wide guidelines in terms of working time and accessibility as well as clear task agreements considering these side effects may help to prevent them. Leaders should respect and pay attention to compliance with these regulations, but should also act as role models by following these rules (Kordsmeyer et al., 2020; Robelski et al., 2018). Furthermore, by treating their followers respectful, giving them recognition as well as providing clear work assignments and clear work goals, leaders can help employees to deal successfully with work demands associated with working time autonomy. However, leaders should be empowered to adjust the level of autonomy and decision latitude of their subordinates in an appropriate way – keeping track of employees' health and well-being. Furthermore, practitioners should also take into account whether leaders have all the necessary resources to carry out their role and meet all the expectations.

For Research

One big question that can be derived from our study is how leaders should behave to support and protect their followers against temporal boundarylessness in case of working from home (Antoni & Syrek, 2017; Romeike et al., 2016). How can leaders support their followers over a distance without monitoring them (Nayani et al., 2018)? Previous research has shown that the increased communication is a key factor, especially in the case of spatial separation (Robelski et al., 2018). However, due to the increasing relevance of working from home more research is necessary.

Besides leadership behaviour, employees themselves can improve their personal skills and resources that they acquire the appropriate competencies to work self-organised and manage the boundaries between work and private life. Empirical studies have already demonstrated that interventions teaching mindfulness may support employees in managing their boundaries (Bosch et al., 2014; Rexroth et al., 2017). In order to support employees in dealing with the challenges of flexible forms of work regarding place and time, more research on developing and evaluating interventions may be helpful (Rexroth et al., 2017). Finally, as our study emphasizes the importance of leaders, the health of leaders themselves and their specific work demands associated with the leadership role have so far been neglected in research (Barling & Cloutier, 2017; Zimber et al., 2015). Thus, future studies should focus on the leaders and examine what leaders need and which organizational structures support them in meeting the new requirements of their leadership role.

Conclusion

This article examines the potentially harmful side of autonomy and the role of leadership behaviour in mitigating these harmful effects. We thereby considered multiple dimensions of autonomy, namely the traditional decision latitude, working time autonomy and working from home. This study points out that the "new" facets of autonomy (working time autonomy and working from home) are not only

beneficial for individual health but may have the potential to deteriorate employees' health by blurring the boundaries between private and work lives. Leaders have the possibility to mitigate potential detrimental side effects of working time autonomy by treating them respectfully and guiding them with clear work assignments. However, working from home seems to lead to temporal boundarylessness, independent of leadership behaviour. Thus, more research focusing on supporting employees when working from home and thereby mitigating blurred boundaries may be necessary.

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Appendix

Table A1. Results of the path model for control variables

	Subjective health				Psychosomatic health complaints				Temporal boundarylessness			
Direct effects	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*
Gender (Ref.: male)												
■ female	-.01	.04	-.01	.76	.18	.11	.05	.10	-.21	.06	-.11	<.01
Age (in years)	-.02	<.01	-.36	<.01	.02	<.01	.14	<.01	<.01	<.01	-.05	.06
Eduction (Ref.: low)												
■ medium	.16	.08	.09	.04	.17	.19	.04	.38	.08	.08	.03	.33
■ high	.27	.10	.13	.01	-.13	.23	-.03	.58	.25	.12	.09	.04
Working time duration (Ref.: part-time)												
■ full-time	.13	.04	.08	<.01	-.28	.11	-.08	.01	.32	.05	.15	<.01
Economic sectors (*NACE*, four groups, Ref.: Services, excluding public administration)												
■ Agriculture, hunting, forestry and fishing	.20	.20	.03	.31	-.38	.39	-.03	.33	-.27	.35	-.03	.44
■ Industry	-.09	.04	-.06	.03	.06	.11	.03	.62	-.26	.07	-.12	<.01
■ Public administration and defense and other services	-.10	.05	-.06	.03	.18	.12	.05	.11	-.13	.06	-.06	.03
Occupations (*ISCO*-08, Ref.: Service and sale Workers)												
■ Managers and professionals	-.11	.07	-.03	.12	-.02	.17	<.01	.92	-.28	.10	-.10	.01
■ Technicians and associate professionals	.01	.06	-.02	.84	.18	.15	.04	.23	-.18	.08	-.07	.02
■ Clerical support workers	-.05	.06	-.03	.37	.12	.15	.03	.42	-.53	.07	-.20	<.01
■ Skilled agricultural, forestry and fishery workers	-.17	.27	-.07	.54	.68	.54	.04	.21	.04	.40	<.01	.92
■ Craft and related trades workers	-.06	.07	-.03	.36	.31	.17	.06	.06	-.15	.10	-.05	.13
■ Plant and machine operators, and assemblers	-.16	.07	-.07	.02	.37	.19	.06	.05	-.19	.11	-.05	.10
■ Elementary occupations	-.19	.07	-.08	.01	.24	.19	.04	.19	-.12	.09	-.03	.17
Shift work (Ref.: shiftwork)												
■ no shift work	.03	.05	.02	.59	-.09	.12	-.02	.44	.62	.06	.28	<.01

Note. *NACE* Nomenclature statistique des activités économiques dans la Communauté européenne (standard classification of economic sectors used in the European Union), *ISCO-08* International Standard Classification of Occupations 2008 (standard classification for occupations used by the International Labour Organisation), *Ref.* indicates the reference categories of dummy variables in the statistical model